MILL POND RESTORATION PROJECT – Phase II

Quality Assurance Project Plan

NASHUA REGIONAL PLANNING COMMISSION

November 2002

Project Manager _____

Betsy Hahn
Name/Date

NH DES Lab Manager _____

Rachel Rainey
Name/Date

NH DES Limnology Center
Project QA Officer _____

Andy Chapman
Name/Date

Nashua Wastewater Lab _____

Nancy Lesieur
Name/Date

Program QA Coordinator _____

Andrea Donlon
Name/Date

NHDES QA Manager _____

Vince Perelli, NHDES
Name/Date

USEPA Project Manager _____

Warren Howard
Name/Date

USEPA QA Officer _____

Arthur Clark
Name/Date

Table of Contents

A 3 Distribution List

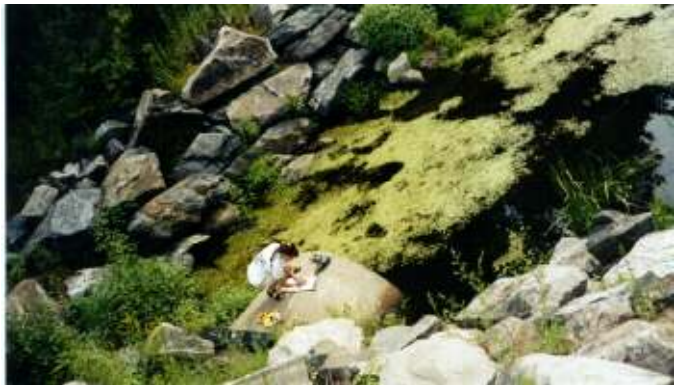
Table 1. QAPP Distribution List

QAPP Recipient Name	Project Role	Organization	Telephone number and Email address
Betsy Hahn	Project Manager	Nashua Regional Planning Commission	603-883-0366 betsyh@nashuarpc.org
Ralph Andrews	Field Coordinator	Nashua River Watershed Association	603-889-3222
Andrea LaMoreaux	Volunteer trainer	NHDES VLAP Program Coordinator	603-271-2658 alamoreaux@des.state.nh.us
Nancy Lesieur	Laboratory Manager	Nashua Wastewater Treatment Laboratory	603-589-3560 lesieurn@ci.nashua.nh.us
Andy Chapman	Laboratory QA Officer Project QA Officer	NHDES Limnology Center Laboratory	603-271-5334 achapman@des.state.nh.us
Rachel Rainey	Laboratory QA Officer	NHDES Laboratory	603-271-2993 rrainey@des.state.nh.us
Andrea Donlon	Program QA Coordinator	NHDES Watershed Management Bureau	603-271-8862 adonlon@des.state.nh.us
Vincent Perelli	NHDES Quality Assurance Manager	NH DES Planning Unit	603-271-8989 vperelli@des.state.nh.us
Warren Howard	USEPA Project Manager	USEPA New England	617-918-1587 Howard.Warren@epamail.epa.gov
Arthur Clark	USEPA Quality Assurance Officer	USEPA New England	617-918-8374 Clark.Arthur@epamail.epa.gov

A 4 Project/Task Organization

The *Mill Pond Restoration Project Phase II* requires the participation of a number of partners. The two major partners are the Nashua Regional Planning Commission and the City of Nashua. Betsy Hahn, NRPC, is the Project Manager and is responsible for coordinating the project with NHDES, developing the QAPP, coordinating wet weather sampling, water flow measurements, sample delivery and correspondence with all labs (Nashua Wastewater, DES, DES Limnology), assisting with the development of the educational component, information coordination with Andy Chapman, the NHDES Project QA Officer and preparation of the final report to NHDES. The Project QA Officer will interpret lab results with the Project Manager and Field Coordinator.

Andrea Lamoreaux, NHDES VLAP Coordinator has the overall responsibility for training volunteer monitors. Ralph Andrews, Field Coordinator will coordinate with monitors, deliver samples to the three labs, analyze lab results with Project QA Officer and NRPC, and assist with the final report. The NRPC, Mine Falls Advisory Committee and NRWA volunteers will do the sampling and assist with the educational component. Andrea Donlon is responsible for coordination with the USEPA Project Manager Warren Howard.



A 5 Problem Definition/Background

The *Mill Pond Restoration Project – Phase II* proposes to assess water quality by analyzing waterflow and the nonpoint sources of pollution impacting Mill Pond and the Nashua River Canal. Both the Mill Pond and Canal have experienced increased growth of aquatic vegetation in the past five years. In 1998, the NH Department of Environmental Services (DES) collected samples from the Mill Pond as part of the Lake Monitoring for Trophic Classification program. The survey, conducted on July 21, 1998, documented extremely dense growths of coontail and milfoil and indicated that algal mats covered 40 percent of the Mill Pond. Water quality analysis indicated total phosphorous levels of 0.046 and 0.098 mg/l, at 2.5 and 5 meters respectively. The 2000 Mill Pond Restoration Project also revealed high total phosphorous and conductivity levels at all fixed sites (6) and stormwater outfalls (8). No dissolved oxygen was found below 12 feet in the 22 foot deep Mill Pond in 1998 and 2000. The average reading for conductivity and phosphorous at this level was 6 times the State level of concern. Mill Pond receives large volumes of urban runoff from parking lots and other impervious areas in the watershed. The data gathered from this 319 Water Quality Grant project and drainage calculation will be used to determine if secondary stormwater treatment is necessary. If treatment is needed, the principal data users will determine what type and size secondary treatment measures could be used to improve water quality. The principal data users will be NHDES, NRPC and the City of Nashua. If secondary treatment is necessary, NRPC and the City of Nashua will purse an EPA 319 Restoration Grant through NHDES.

A 6 Project/Task Description

A volunteer water quality monitoring program will be established with assistance from the NHDES -VLAP, the NRWA and the NRPC. Two fixed stations will be set up in the Mill Pond at 2.5 and 5 meters. The proposal is to monitor these sites monthly, June through October, for dissolved oxygen (DP) , total phosphorous (TP), *E. coli*, pH, conductivity, turbidity, Chlorophyll-A and acid neutralizing capacity (Alkalinity). In addition to the fixed in pond sites, wet weather sampling will be conducted at the eight stormwater outfalls to the Mill Pond during 5 storm events. The samples will be analyzed for TP, pH, *E. coli*, turbidity, conductivity, and total suspended solids (TSS). Although petroleum hydrocarbons and metals may be a problem, we elected not to test for them due to the expense and scope of the overall grant. The VLAP staff will train monitors. The proposed monitoring program will utilize volunteers, NRWA and the Mine Falls Park Advisory Committee to collect samples.

Project Schedule
The project will proceed on the following schedule:

1. Develop QAPP – Fall 2002
2. Train Volunteers – May 2003
3. Sampling – May - October 2003
4. Write final report – Fall 2003

A 7 Quality Objectives and Criteria for Measurement Data

Table A-1 contains the analytical objectives for each parameter tested for surface water tested during the summer and fall of 2002 (2003 if needed).

Table A-1: Quality Objectives

Parameters	Desired Lab Precision	Desired Field Precision	Accuracy
Nashua Wastewater			
E. coli Membrane Filter Procedure, EPA	Counting range 20-80 colonies	100-200 colonies	No spikes - $\leq$10% of ind.. Control run 1 per batch

1103.1 M-Tec Agar method			
TSS EPA 160.2 rev. 1971	Duplicate 10% RPD	Duplicate 15% RPD	No spikes - ≤10% of ind. Control run 1 per batch
NHDES Limnology Center			
Conductivity	± 2.00 µS/cm (0-<50 µS/cm Range) ± 5.00 µS/cm (50-<100 µS/cm Range) ± 10.00 µS/cm (100-<500 µS/cm Range)	N/A	10 µS/cm
Turbidity	± 0.32 NTU (0-1.99 NTU Range) ± 0.76 NTU (2.0->19.9 NTU Range) ± 5 NTU (20->200 NTU Range)	N/A	1.00 NTU
Chlorophyll A	± 1.50 mg/m³ (0-5 mg/m³ Range) ± 2.97 mg/m³ (5.1->10 mg/m³ Range)	N/A	2 mg/m³
Alkalinity	± 1.50 mg/L as CaCO3 (0-5 mg/L Range)	N/A	2 mg/L as CaCO3
pH	0.1 pH Units	0.1 pH Units	No spikes - ≤10% of ind.. Control run 1 per batch
NHDES Lab			
Total Phosphorous EPA 3652	Lab duplicate range 0.006mg/L	Duplicate range between samples is 0.009 mg/L	Spiked samples 5-10% or one per analytical batch 80-120 recovery range
DO-Meter	*10% mg/L & **5**% % **Air Saturation (0-5C)** *5% mg/L & **2.5**% % **Air Saturation (5.1-45**C)	N/A	0.5 mg/L & 5% Air Saturation

Precision

Precision will be measured by analyzing sample replicates and determining if those replicates fall within the critical range for that testing protocol. If the replicate falls within the critical range, the precision will be acceptable. If the replicate falls outside of the critical range, the sample will be run again to determine if there was an error in the analyzer or the equipment that led to the imprecision.

Duplicate precision will be analyzed using the equation:

$$RPD = \frac{|x_1 - x_2|}{\frac{x_1 + x_2}{2}} \times 100\%$$

where $x1$ is the original sample concentration

x_2 is the replicate sample concentration

RPDs <5% will be deemed acceptable.

Accuracy

As an indicator of measurement confidence, percent accuracy will be calculated based on analytical results of spiked samples of known chemical concentrations for Total Phosphorus.

$$\%Accuracy/Bias = \frac{Spiked\ Sample\ Conc. - Unspiked\ Sample\ Conc.}{Spiked\ Conc.\ Added} \text{ X } 100\%$$

For pH, accuracy is expressed as the difference between the mean measured value and the theoretical value.

Representativeness
The main environmental problem at the site is stormwater runoff and the excess of phosphorus stimulating algal growth in the pond. Discussion with the Project QA Officer during the preparation of the grant application lead to the parameters chosen based on past and present conditions. These sampling stations will accurately represent the water quality of the Mill Pond and Canal and stormwater discharges into the Mill Pond. Duplicate samples will be collected at a rate of approximately 10 percent of the samples collected to ensure the integrity of the data.

Comparability
This project uses the same sampling procedures, analytical methods, units of reporting and sites as the previous 319 grant completed in 2000 to help insure comparability.

Sensitivity
The previous 319 grant data show that the methods and instruments are able to detect the parameters of concern. Detectable ranges of the methods and the equipment are adequate for the purposes of this project.

Quantification Limits
The analytical method, analytical/achievable method detection limit and the analytical/achievable quantification limits for this project are shown below in Table A-2.

Table A-2: Surface Water Target Analytes and Reference Limits

Analyte	Analytical method (See Appendix [] for SOP Reference)	Project Action Level	Analytical/Achievable Method Detection Limit	Project Quantification Limit
Total phosphorus	Lachat QuikChem Method 10-115-01-1-F	NA	0.0008 mg/L	0.005 mg/L
E. coli	Membrane Filter Procedure, EPA 1103.1 M-Tec Agar method	20-80 colonies	> 80 is considered TNTC	> 80 is considered TNTC
Temperature	field – YSI Model 52	NA		
pH	field	NA		
Dissolved oxygen	field	NA		
Conductivity	field	NA		
Turbidity	field	NA		

Based on EPA-NE Worksheet #9b and 9c.

Completeness
Discussions with the Project QA Officer during the grant application process determined that the number of samples was adequate for the purpose of this project.

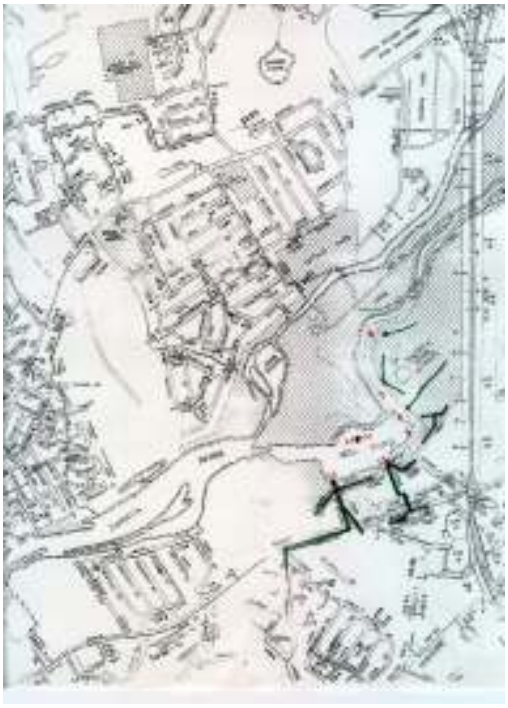
A 8 Special Training/Certification

Volunteer monitors will be required to attend a field sampling training session prior to the commencement of this assessment project. The field training session that will introduce the volunteers to NHVLAP standard operating procedures and techniques and include mock collection runs to verify sampling competency. The NHVLAP Program Coordinator will conduct the training session.

The Project QA Officer, or their designee will assist with the first monitoring event to ensure proper procedure and techniques are being followed. The QA Officer assistance during the initial sampling efforts will serve as refresher training for the volunteers.

A 9 Documents and Records

Hard copies of VLAP field sheets will be used during each sampling and individual chain of custody forms will be completed for each lab. The final report will include the test results and analysis of the data by the Project QA Officer, Project Manager and Field Coordinator. This report will be posted on the Nashua Regional Planning Commission web-site and be available in both written and electronic form.



B 1 Sampling Process Design

Two fixed sampling locations are in the deepest spot in Mill Pond and are the same location in previous studies. The eight outfall stormwater pipes are located on the Mill Pond and the beginning of the Canal near Nashua High School.

Eleven parameters were chosen for this project based on the following rationale:

1. *E. coli* – The Parks regular visitors include dogs and waterfowl;
2. DO - No DO found below 12 feet in the previous study;
3. pH-To determine if the growth and reproduction of fish and other aquatic organisms is a problem;
4. TSS - Mill Pond receives large volumes of urban runoff from parking lots and other impervious areas in the watershed;
5. Conductivity -- To determine if urban runoff is a significant problem;
6. Turbidity - To determine clarity and how much suspended matter is in the water;
7. Chlorophyll A - Indicator of algae abundance;
8. Alkalinity - Ability of this water body to neutralize acidic input;
9. TP - Identified problem in previous studies and is the limiting nutrient which algae utilize to maintain their growth and reproduction;
10. Temperature – To be used as a contributing factor with other parameters i.e. phosphorous and increased algal blooms.

B 2 Sampling Methods

In Pond Sampling

Samples will be taken at one location at 2.5 and 5.0 meters. A Kemmerer bottle and marked chain will be used to collect samples. These sites will be for *E. coli*, DO, pH, conductivity, turbidity, Chlorophyll-A, and Alkalinity. Volunteers will measure temperature in the field and duplicate samples will be collected and recorded. DO meter measurements will only be taken at the surface and at one meter intervals at the Mill Pond fixed station. The field calibration and analysis of DO will be in accordance with the manufacture's instructions (Appendix A). All sampling will follow VLAP standard operating procedures for in-lake and tributary sampling techniques (See Appendix B) and recorded of the VLAP field sheets. Field sheet data includes existing weather conditions, surface water conditions and lake level. The samples will be stored on ice in a cooler until delivery to the laboratories. Samples must be delivered to the laboratory within 6 hours of collection in order to meet the

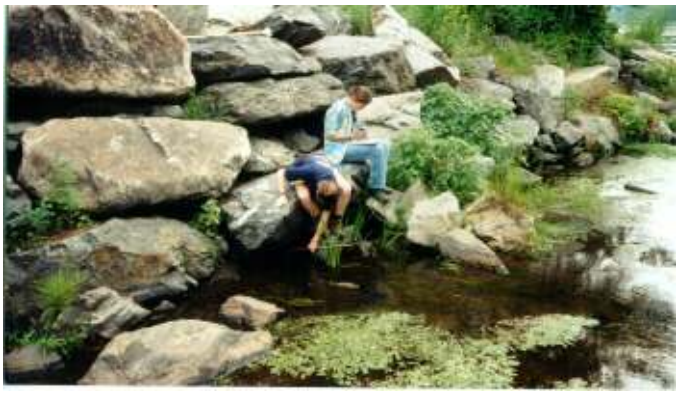
hold time for the bacteria samples. Samples will not be collected if the hold time can not be met or if the lab is closed.

In Pond Monitoring Locations (See Map on previous page):

Station #1 – Mill Pond at 2.5 meters
Station #2 – Mill Pond at 5.0 meters (same location)

Wet Weather Stormwater Sampling

Wet weather sampling will be performed to characterize the contaminant contribution from the eight stormwater outfalls to the Mill Pond and Canal during 5 storm events. One sample per outfall will be gathered during the first flush. The samples will be analyzed for *E. coli*, pH, total suspended solids, conductivity, turbidity, and total phosphorous. Sampling will only be conducted when preceded by 72 hours of dry weather and are predicted to have at least 0.3 inches of rainfall. Samples will be taken during the "first flush", i.e., the first half-hour of the precipitation event. Water samples will be collected in laboratory–supplied containers by placing the head of the bottle at the end of the culvert/pipe discharge until full. (See Appendix B). Record will be kept documenting the following:



1 Date the rainfall event started
2. Time the rainfall event started
3. Time the rainfall event ended
4. Total amount of the rainfall event in inches
5. Previous rainfall event date and the amount
6. Flows at the time of sampling

Flow Measurements

The depth of water in the pipe will be measured and the tables in Appendix B will be used to determine the cross-section area. The prop on the flow probe will be inserted directly into the flow of water with the arrow on the bottom of the probe pointing downstream. The probe will be moved slowly and smoothly throughout the flow. Because velocities vary across the cross-section of the pipe the probe will be moved for 30 seconds to get a good average. The measurement will be noted on the field sheets.

B 3 Sample Holding Times and Custody

Table B-1: Field Sampling Table

Parameter	Sample Matrix/ Collection Method	# Samples (includes field duplicates)	Sample Volume	Sample Container	Preservation Method	Max. Holding Time
Nashua Wastewater						
E. coli	Water/Grab	Wet – 40 (8 Duplicates)	100 ml	Plastic or glass	4C	6hrs.
Total Suspended	Water/Grab	Wet – 40	100 ml	Plastic or	4C	7 days

Solids		(8 Duplicates)		glass		
NHDES Limnology Center						
Conductivity	Water/Grab	In Pond – 10 (5 Duplicates) Wet – 40 (8 Duplicates)	1000 ml	Polyethylene Clear	Cool, 4 C	24 Hrs
Turbidity	Water/Grab	In Pond – 10 (5 Duplicates) Wet – 40 (8 Duplicates)	1000 ml	Polyethylene Clear	Cool, 4 C	24 hrs
Chlorophyll A	Water/Composite	5	500 ml	Polyethylene Dark	Cool, 4 C, In Dark	24 Hrs
Alkalinity	Water/Grab	5	1000 ml	Polyethylene Clear	Cool, 4 C	24 Hrs
pH	Water/Grab	In Pond – 10 Wet – 40	1000 ml	Polyethylene Clear	Cool, 4 C	N/A
NHDES Lab						
Total Phosphorous	Water/Grab	In Pond – 10 (5 Duplicates) Wet – 40 (8 Duplicates)	250 ml	HDPE-brown	Cold, 4 C H2SO4 to pH < 2	28 days
DO Meter						
Dissolved Oxygen	YSI Model 52	10	N/A	N/A	N/A	N/A

Sample Collection Procedure

1. The chain of custody and sample bottles are prepared and provided by the labs. Upon receiving the cooler the sampling agent will inspect each bottle for the appropriate size, container material (glass or plastic), and preservative. Each bottle will be labeled by the labs with the preservative used and the test(s) to be performed. The sampling agent will check this information carefully before going into the field.

2. Each sample bottle will be opened and filled to the shoulder of each bottle. All sites will be sampled by submerging each bottle under the water at least several inches to avoid collecting surface debris. Another bottle will be used to fill bottles containing acid preservation. The sample bottle used to collect the bacteria sample should contain at least 100 mL and care should be taken not to touch the inside of the bottle or allow the inside of the cap to touch any surface. Field personnel will be careful to not overflow bottles with preservative or touch the inside of the sampling container used for collection of bacteria sample. Duplicate samples will be taken using the same sampling procedure.

3. De-ionized water (trip blank) will be poured into a sample container in the field as if were just another stormwater sample.

4. Once filled, the bottles will be placed in the cooler. The date, time, and initials will be recorded on a chain of custody form.

5. Field duplicates will be taken once for each parameter during each sampling event.

6. Once all samples have been collected and the appropriate paperwork has been filled out completely, the samples are to be taken immediately to the laboratories.

7. Samples and paperwork will be turned over to the sample receptionist at the labs. Arrangements will be made at this time to receive a complete replacement set of bottles for next sampling event.

B 3 Sample Handling and Custody

The holding times for all samples are listed in Table B 1. A chain-of-custody form provided by the laboratories will be filled out each time a sample is collected with the following information:

1. Sample station number, sample identification and location
2. Date and time the sample was collected
3. Sample type: Grab
4. Sample matrix: Water
5. Number of containers turned into the lab
6. Preservative used in each container
7. The analysis requested
8. Sampler name and signature
9. Date and time the samples were dropped off at the lab

B 4 Analytic Procedures

Table B-2 summarizes the analytical methods used by all laboratories for this project.

Table B-2: Analytical Methods

Analytic	*Matrix*	*Analytical Method*
Nashua Wastewater		
E. coli	Water	EPA 1103.1 M-Tec Agar method
TSS	Water	EPA 160.2
NHDES Limnology Center		
Conductivity	Water	2510B Standard Methods 20th Ed. 1998
Turbidity	Water	2130B Standard Methods 20th Ed. 1998
Chlorophyll A	Water	10200H Standard Methods 20th Ed. 1998
Alkalinity	Water	2320B Standard Methods 20th Ed. 1998
pH	Water	2310B Standard Methods 20th Ed. 1998
DO	Water	YSI Model 52
NHDES Lab		
Total Phosphorus	Water	EPA 365.2

B 5 Quality Control Samples

Table B-3 summarizes the quality control samples used by field personnel and the labs. Field duplicates will be taken at a minimum of one station during each sampling event.

Table B-3: Quality Control Samples

Analyses	Lab Duplicates	Spiked Samples	Trip Blanks	Lab Blanks	Field Duplicates
Nashua Wastewater					
E. coli	10%	No	No	Yes-1/batch	10%
TSS	10%	No	ERA or equivalent	Yes-1/batch	10%
NHDES Limnology Center					
Conductivity	10%	No	No	No	10%
Turbidity	10%	No	No	Yes	10%
Chlorophyll A	10%	No	No	Yes-1/batch	10%
Alkalinity	10%	No	No	No	10%
pH	10%	No	No	No	No
NHDES Lab					
Total Phosphorus	1 of 10	1of 10	NA	Yes-1/batch	10%
In situ					
Dissolved Oxygen	No	No	No	No	No

Field duplicates will be taken at a minimum of one station during each sampling event to assist in the evaluation of the volunteer monitoring collection efforts. The Project Manager will follow up on suspicious results with the appropriate lab.

B 6 Equipment Testing, Inspection and Maintenance

The YSI 52 Dissolved Oxygen Meter probe membrane will be inspected for air bubbles prior to field use. All other testing, maintenance, and inspection of the meter will be in accordance with the manufacturer's instruction manual (Appendix A). All laboratory Quality Assurance Manuals are located in Appendices C-E. The flow probe will be inspected to make sure the prop turns freely. If the prop gets fouled, it will be cleaned with mild soap and water until the prop turns freely.

B 7 Instrument/Equipment Calibration and Frequency

The YSI 52 Dissolved Oxygen Meter will be calibrated daily in accordance with the manufacturer's instructions (Appendix A). The Limnology Center Instrument Calibration information can be found in Appendix C. In addition, when samples from this project are analyzed at the Limnology Center, calibration verifications will be performed on the pH, Turbidity, and Conductivity meters after the last project sample has been analyzed. If the calibration verifications show unacceptable calibration drift, all samples since the last calibration check should be reanalyzed. The calibration verification standard for the pH, Turbidity, and Conductivity meters shall be 6.00 pH units, 1.0 NTUs, and 100 μS/cm respectively.

The Nashua Waste Water Treatment Plant Instrument Calibration information can be found in Appendix D. The Global Flow Probe Model FP 101 calibration information is in Appendix F. The probe will be calibrated according to the instructions in the event that the batteries need replacing.

B 8 Inspection/Acceptance of Supplies and Consumables

The chain of custody and sample bottles are prepared and provided by all laboratories. Upon receiving the cooler, personnel will inspect each bottle for the appropriate size, container material (glass or plastic), and preservative. Each bottle will be labeled by the labs with the preservative used and the test(s) to be performed. The sampling agent will check this information carefully before going into the field.

B 9 Non-Direct Measurements

The only non-direct measurement that will be used is weather data from the National Weather Service.

B 10 Data Management

Chain-of-custody documentation will be maintained. Data sheets will be reviewed for completeness and for holding times by the Field Coordinators. NRPC will receive hard copies of the water quality results and field sheets from all laboratories. NRPC and NHDES will interpret the results and NRPC will write the final report in electronic form for NHDES. The final report will be posted on the NRPC web-site and available to all interested parties electronically or in print.

C 1 Assessments

Ralph Andrews, will serve as Field Coordinator on this project. He has extensive water quality sampling experience. He will help coordinate scheduling volunteers, assist with deliveries to labs in the proper time frames, and perform on-site assessments early in the monitoring season to assure proper procedures are being followed. NRPC will compile and interpret the data from the labs.

Table C-1: Project Assessment Table

Assessment Type	Frequency	Person responsible for performing assessment	Person responsible for responding to assessment findings	Person responsible for monitoring effectiveness of corrective actions
Field sampling audit	Once at beginning of study	Andrea Lamoreaux VLAP Coordinator NHDES	Andrea Lamoreaux VLAP Coordinator NHDES	Andrea Lamoreaux VLAP Coordinator NHDES
Field analytical assessment	Once at beginning of study	Andrea Lamoreaux VLAP Coordinator NHDES	Andrea Lamoreaux VLAP Coordinator NHDES	Andrea Lamoreaux VLAP Coordinator NHDES
Limnology Center Fixed Lab audit	Bi-Weekly	Andy Chapman QA/QC Officer NHDES	Andy Chapman QA/QC Officer NHDES	Andy Chapman QA/QC Officer NHDES
NHDES Laboratory Services Fixed Lab audit	Weekly	Rachel Rainey Chem Lab QA/QC Officer NHDES	Rachel Rainey Chem Lab QA/QC Officer NHDES	Rachel Rainey Chem Lab QA/QC Officer NHDES
NWWTP Laboratory Services Fixed Lab audit	Weekly	Nancy Lesieur Chem Lab QA/QC Officer NWWTP	Nancy Lesieur Chem Lab QA/QC Officer NWWTP	Nancy Lesieur Chem Lab QA/QC Officer NWWTP

Based on EPA-NE Worksheet #27b.

C 2 Reports to Management

Results from the laboratories will be distributed to the Field Coordinator, the Project QA , and DES Limnology Center. A final report prepared by Betsy Hahn, Project Manager, will be given to NHDES as part of the Nonpoint Source Program Local Initiative Grant and will be available to the public pending final approval from NHDES.

D 1 Data Quality Requirements

The Project Manager will review all monitoring results and evaluate QC requirements for usability in obtaining the stated objectives of the project based on the criteria established in Tables A-1 and A-2, and the QC criteria in Section B5.

D 2 Verification and Validation Methods

Field and laboratory data are submitted to the Project Manager. The Project Manager reviews all field data for completeness by making sure all entries on the data sheets are filled out. The Project Manager makes sure that any questionable entries are verified by speaking to the sampling team or reviewing the field sheets and noting any unusual or anomalous data in the project files.

The Project Manager reviews the lab data by looking at the lab narrative and the quality control sample results to see if the data are qualified. Any decisions made regarding the usability of the data will be left to the Project Manager, however the Project Manager may consult with project personnel, NHDES QA staff, or with personnel from EPA-NE

D 3 Reconciliation with User Requirements

If the project objectives from Section A7 are met, the user requirements have been met. If the project objectives have not been met, corrective action as discussed in D2 will be established by the Project Manager prior to the next monitoring event.

Appendix A

Manufactures' Instructions for Field Calibration for DO Meter

Appendix B

New Hampshire Volunteer Lake Assessment Program
Standard Operating Procedures for Sampling

Appendix C

New Hampshire Department of Environmental Services
Limnology Center Lab Quality Assurance

Appendix D

Nashua Wastewater Treatment Plant
Lab Quality Assurance

Appendix E

For description of protocols for determining detection limits, accuracy, and precision, see NHDES Laboratory Services Unit Standard Operating Procedures (SOP's) on file with EPA

Appendix A

Manufactures' Instructions
for Global Flow Probe
FP101 – FP201